

Isoetes nuttallii A. Braun ex Engelm.

Nuttall's quillwort
Isoetaceae (Quillwort Family)

Status: State Sensitive

Rank: G4?S1

General Description: Corms 3-lobed; leaves 3-8 inches long, <1/16 inch wide, erect, flexible, commonly twisted, bright green, pale towards the base, with long, hyaline alae above the base; peripheral strands 3; ligule small, triangular; sporangia 1/8 to 5/16 inch long, unpigmented, completely covered by the velum; megaspores white, <1/16 inch in diameter, with low tubercles or short ridges, the micro-ornamentation of short microspines arising from a loose reticulum.

ala (alae pl.) = a wing, usually a long, narrow membrane laterally bordering a stipe, rachis, or costa.

ligule = a small often triangular flap of leaf tissue located just distal to the sporangium on the adaxial surface of the leaf base.

reticulum = a mesh-like network.

velum = a thin covering over the sporangium on the abaxial surface of the leaf base.

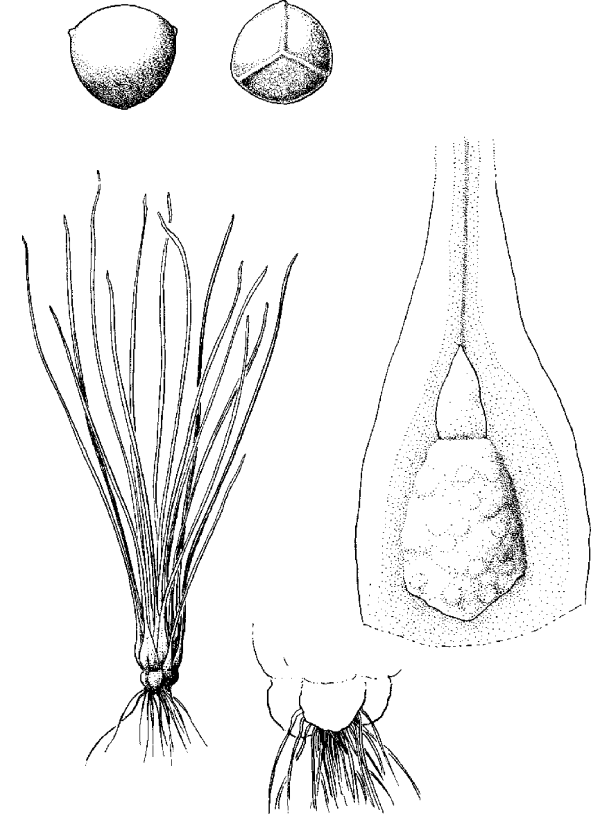
Identification Tips: There are 4 other quillwort species in our area: Bolander's quillwort (*I. bolanderi*), spiny-spore quillwort (*I. echinospora*), lake quillwort (*I. lacustris*), and Howell's quillwort (*I. howellii*). These are mostly distinguished by technical features of the spores and spore cases (see technical manuals). Quillworts can be hard to distinguish from the new shoots of grasses and rushes, however, the bulb-like stem and the spore cases in the leaf bases are distinctive features of quillworts.

Phenology: The species can be identified from mid-April through early June.

Range: Southeast Vancouver Island south to southern California. In WA, it is currently known from Cowlitz, San Juan, and Thurston counties (Western Cascades and Puget Trough physiographic provinces). Historically known from Klickitat and Lincoln counties (Columbia Basin and Eastern Cascades physiographic provinces).

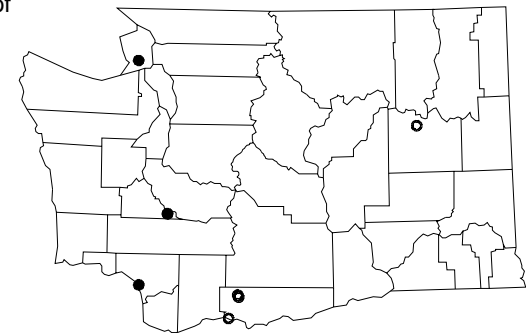
Isoetes nuttallii

Nuttall's quillwort



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Known distribution of
Isoetes nuttallii in
Washington



● Current (1980+)
○ Historic (older than 1980)

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Habitat: Terrestrial in wet ground or seepages and in mud near vernal pools. Low to middle elevations.

Ecology: The species presumably is dependent upon maintaining the hydrologic patterns within the microsites that support it.

State Status Comments: This species is known from only a few recent sites. However, it can be rather inconspicuous and may be somewhat more widespread than the data currently suggest.

Inventory Needs: Additional inventory is needed throughout its range. All known sites should be revisited.

Threats and Management Concerns: This species occurs in areas that are seasonally quite wet, but which can be subject to significant hydrologic change resulting from physical disturbances to the habitat (or adjacent habitat). Such disturbances could result from road construction, agricultural conversion, grazing, off-road vehicle activity, other recreational activity, etc.

References:

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- Hitchcock, C. L., A. Cronquist, M. Ownbey, and J.W. Thompson. 1969. *Vascular Plants of the Pacific Northwest, Part 1: Vascular Cryptogams, Gymnosperms, and Monocotyledons*. University of Washington Press, Seattle. 914 pp.
- Lellinger, D.B. 1985. *A Field Manual of the Ferns & Fern-Allies of the United States and Canada*. Smithsonian Institution Press, Washington D.C. 389 pp.
- Pojar, J. and A. MacKinnon. 1994. *Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia & Alaska*. B.C. Forest Service, Research Program. Lone Pine Publishing, Vancouver, B.C. 527 pp.